What is claimed is:

1. A method of treating or preventing myocardial oxidative stress in a subject, comprising administering erythropoietin to a subject in need thereof at a concentration that does not increase the hematocrit in said subject.

2. The method of claim 1, wherein said myocardial oxidative stress is caused by hypoxia or ischemia.

3. The method of claim 1, wherein said erythropoietin is administered at a concentration of less than about 5,000U/kg.

4. A method of treating or preventing myocardial oxidative stress in a subject, comprising administering erythropoietin to a subject in need thereof at a concentration that does not induce red blood cell production in said subject.

5. The method of claim 4, wherein said erythropoietin is administered at a concentration of less than about 5,000 U/kg.

6. A method of treating or preventing myocardial oxidative stress in a subject, comprising administering erythropoietin to a subject in need thereof for a time period in which the hematocrit in said subject is not increased.

7. The method of claim 6, wherein said time period is about one week.

8. The method of claim 6, wherein said time period is about four days.

9. A method of treating or preventing myocardial nitrosative stress in a subject, comprising administering erythropoietin to a subject in need thereof at a concentration that does not increase the hematocrit in said subject.

10. The method of claim 9, wherein said myocardial nitrosative stress is caused by drugs, infection, inflammation, hypoxia or ischemia.

11. The method of claim 9, wherein said erythropoietin is administered at a concentration of less than about 5,000U/kg.

12. A method of treating or preventing myocardial nitrosative stress in a subject, comprising administering erythropoietin to a subject in need thereof at a concentration that does not induce red blood cell production in said subject.

13. The method of claim 12, wherein said erythropoietin is administered at a concentration of less than about 5,000 U/kg.

14. A method of treating or preventing myocardial nitrosative stress in a subject, comprising administering erythropoietin to a subject in need thereof for a time period in which the hematocrit in said subject is not increased.

15. The method of claim 14, wherein said time period is about one week.

16. The method of claim 14, wherein said time period is about four days.

17. A method of modulating a cardioprotective signaling pathway, comprising administering, to a subject in need of cardioprotection, erythropoietin at a concentration that does not induce red blood cell production in said subject.

18. The method of claim 17, wherein said cardioprotective signaling pathway is selected from the group consisting of MAP kinase, PI3 kinase, an insulin-responsive pathway, hormones, ischemia preconditioning, adenosine pathways, ras, JAK/STAT, nitric oxide synthase, hemoxygenase, xanthine oxidase, NADPH oxidase, cytochrome p450, cytochrome p450 reductase, oxigenases, denitrosylases, GSNO reductase, oxygen-carrying proteins, nitric oxide-carrying proteins, and carbon monoxide-carrying proteins.

19. A method of treating or preventing cardiac injury in a subject, comprising administering erythropoietin to a subject in need thereof at a concentration that does not increase the hematocrit in said subject.

20. The method of claim 19, wherein said cardiac injury is caused by hypoxia or ischemia.

21. The method of claim 19, wherein said injury is selected from the group consisting of myocardial infarction, cardiac arrest, ischemia-reperfusion injury, congestive heart failure, cardiotoxicity, cardiac damage due to parasitic infection, fulminant cardiac amyloidosis, heart surgery, heart transplantation, traumatic cardiac injury, surgical repair of a thoracic aortic aneurysm, a suprarenal aortic aneurysm, hemorrhagic shock due to blood loss, cardiogenic shock due to myocardial infarction or cardiac failure, and anaphylaxis.

22. The method of claim 19, wherein said administration is done prior to reperfusion or infarction.

23. The method of claim 19, wherein said administration is done at the onset of reperfusion.

24. The method of claim, 19, wherein said administration is done subsequent to infarction or cardiac damage.

25. The method of claim 19, wherein the subject also suffers from end-stage renal disease or diabetes.

26. A method of treating or preventing cardiac injury in a subject, comprising administering erythropoietin to a subject in need thereof at a concentration that does not induce red blood cell production in said subject.

27. The method of claim 26, wherein said cardiac injury is caused by hypoxia or ischemia.

28. The method of claim 26, wherein said injury is selected from the group consisting of myocardial infarction, cardiac arrest, ischemia-reperfusion injury, congestive heart failure, cardiotoxicity, cardiac damage due to parasitic infection, fulminant cardiac amyloidosis, heart surgery, heart transplantation, traumatic cardiac injury, surgical repair of a thoracic aortic aneurysm, a suprarenal aortic aneurysm, hemorrhagic shock due to blood loss, cardiogenic shock due to myocardial infarction or cardiac failure, anaphylaxis, unstable coronary syndrome, tachycardia and bradycardia.

29. The method of claim 26, wherein said administration is done prior to reperfusion.

30. The method of claim 26, wherein said administration is done at the onset of reperfusion.

31. The method of claim 26, wherein the subject also suffers from end-stage renal disease or diabetes.

32. A method of treating or preventing cardiac injury in a subject, comprising administering erythropoietin to a subject in need thereof for a time period in which the hematocrit in said subject is not increased.

33. The method of claim 32, wherein said time period is about one week.

34. The method of claim 32, wherein said time period is about four days.

35. The method of claim 32, wherein said injury is selected from the group consisting of myocardial infarction, cardiac arrest, ischemia-reperfusion injury, congestive heart failure, cardiotoxicity, cardiac damage due to parasitic infection, fulminant cardiac amyloidosis, heart surgery, heart transplantation, traumatic cardiac injury, surgical repair of a thoracic aortic aneurysm, a suprarenal aortic aneurysm, hemorrhagic shock due to blood loss, cardiogenic shock due to myocardial infarction or cardiac failure, anaphylaxis, unstable coronary syndrome, tachycardia and bradycardia.

36. A method of preventing organ or tissue damage during organ or tissue transplantation, comprising administering to an organ donor erythropoietin at a concentration that does not increase the hematocrit in said donor, prior to or concurrent with removal of said organ.

37. The method of claim 36, wherein said organ is the heart.

38. A method of treating heart failure in a subject, comprising treating said subject with erythropoietin at a concentration that does not increase the hematocrit in said subject and a compound selected from the group consisting of anti-platelet drugs, anti-coagulant drugs, anti-thrombotic drugs, anti-oxidants, anti-nitrosants, cholesterol lowering drugs, aspirin and aspirin-related derivatives.

39. A method of treating a survivor of a myocardial infarction, comprising administering erythropoietin at a concentration that does not increase the hematocrit in said survivor, wherein the erythropoietin is administered in a single dose within 3 hours of the myocardial infarction.

40. The method of claim 39, wherein the erythropoietin is administered in a single dose within 1 hour of the myocardial infarction.

41. The method of claim 39, wherein the erythropoietin is administered in a single dose within 5 minutes of the myocardial infarction.

42. The method of claim 39, further comprising administering to said survivor a compound selected from the group consisting of an angiotensin-converting enzyme inhibitor, GLP-1, beta blockers, thrombolytics, ADP receptor antagonists,

anti-platelet drugs, anti-coagulant drugs, anti-thrombotic drugs, anti-oxidants, anti-nitrosants, cholesterol lowering drugs, aspirin and aspirin-related derivatives.

43. The method of claim 39, wherein the survivor also suffers from end-stage renal failure or diabetes.

44. A method of treating a survivor of a myocardial infarction, comprising administering erythropoietin at a concentration that does not increase the hematocrit in said survivor, wherein the erythropoietin is administered for an extended period of time.

45. The method of claim 44, wherein said administration is continuous.

46. The method of claim 44, further comprising administering to said survivor a compound selected from the group consisting of an angiotensin-converting enzyme inhibitor, GLP-1, beta blockers, thrombolytics, ADP receptor antagonists, anti-platelet drugs, anti-coagulant drugs, anti-thrombotic drugs, anti-oxidants, anti-nitrosants, cholesterol lowering drugs, aspirin and aspirin-related derivatives.

47. The method of claim 44, wherein the survivor also suffers from end-stage renal failure or diabetes.

48. A method of preventing or reducing the severity of ischemia-reperfusion injury in a subject at risk for ischemia-reperfusion injury comprising administering to the subject an amount of erythropoietin at a concentration that does not increase the hematocrit of the subject.

49. The method of claim 48, wherein the subject is at risk for ischemia-reperfusion injury due to undergoing treatment for myocardial infarction, cardiac arrest, ischemia-reperfusion injury, congestive heart failure, cardiotoxicity, cardiac damage due to parasitic infection, fulminant cardiac amyloidosis, heart surgery, heart transplantation, traumatic cardiac injury, surgical repair of a thoracic aortic aneurysm, a suprarenal aortic aneurysm, hemorrhagic shock due to blood loss, cardiogenic shock due to myocardial infarction or cardiac failure, anaphylaxis, a suprarenal aortic aneurysm, liver, kidney, small intestine, or pancreas transplant, hepatic and biliary surgical resections, total or partial pancreatectomy, total and partial gastrectomy, esophagectomy, colorectal surgery, vascular surgery for mesenteric vascular disease, abdominal insufflation during laparoscopic surgical

procedures, blunt or penetrating trauma to the abdomen including gun shot wounds, stab wounds or penetrating wounds or blunt abdominal trauma secondary to deceleration injury or motor vehicle accidents and neurogenic shock.

50. The method of claim 48, wherein erythropoietin is administered to the subject prior to undergoing treatment.

51. The method of claim 48, wherein erythropoietin is administered to the subject subsequent to undergoing treatment.

52. A method of pre-conditioning a subject at risk for a cardiac injury due to a surgical procedure, comprising administering to the subject an amount of erythropoietin at a concentration that does not increase the hematocrit of the subject prior to the surgical procedure.

53. The method of claim 52, wherein erythropoietin is administered to the subject at least about once per day for about seven days prior to said surgical procedure.

54. The method of claim 52, wherein erythropoietin is administered to the subject at least about one day prior to said surgical procedure.

55. A method of pre-conditioning a subject at risk for a cardiac injury due to a surgical procedure, comprising administering to the subject an amount of erythropoietin for a time period in which the hematocrit in said subject is not increased.

56. The method of claim 55, wherein said time period is about one week.

57. The method of claim 55, wherein said time period is about four days.

58. The method of claim 55, wherein erythropoietin is administered to the subject at least about once per day for about three days prior to said surgical procedure.

59. The method of claim 55, wherein erythropoietin is administered to the subject at least about one day prior to said surgical procedure.

60. A method of increasing beta-receptor density in a subject suffering from cardiac injury, comprising administering erythropoietin at a concentration that does not increase the hematocrit in said subject.

61. The method of claim 60, wherein said cardiac injury is selected from the group consisting of myocardial infarction and cardiac stunning from ischemia or apoptosis.

62. The method of claim 60, wherein the erythropoietin is administered for an extended period of time.

63. A method of preserving beta-receptor sensitivity in a subject suffering from cardiac injury, comprising administering erythropoietin at a concentration that does not increase the hematocrit in said subject.

64. A method of preserving beta-receptor sensitivity in a subject suffering from cardiac injury, comprising administering erythropoietin at a concentration that does not induce red blood cell production.

65. A method of preventing reduced sensitivity to one or more cardiostimulatory compounds in a subject suffering from or at risk of a cardiac injury, comprising administering erythropoietin at a concentration that does not increase the hematocrit in said subject.

66. The method of claim 65, wherein said cardiostimulatory compounds are selected from the group consisting of anti-arrhythmic compounds and contractility enhancing compounds.

67. The method of claim 65, wherein said cardiostimulatory compounds are selected from the group consisting of dopamine, dobutamine, isoprel, digoxin, digitoxin, and norepinephrine.

68. A method of increasing sensitivity to one or more cardiostimulatory compounds in a subject suffering from or at risk of a cardiac injury, comprising administering erythropoietin at a concentration that does not increase the hematocrit in said subject.

69. The method of claim 68, wherein said cardiostimulatory compounds are selected from the group consisting of anti-arrhythmic compounds and contractility enhancing compounds.

70. The method of claim 68, wherein said cardiostimulatory compounds are selected from the group consisting of dopamine, dobutamine, isoprel, digoxin, digitoxin, and norepinephrine.

71. A method of increasing beta-receptor density in a subject suffering from cardiac injury, comprising administering to the subject an amount of erythropoietin for a time period in which the hematocrit in said subject is not increased.

72. The method of claim 71, wherein said time period is about one week.

73. The method of claim 71, wherein said time period is about four days.